

STRUCTURE AND FABRICATION OF FLAT-PANEL DISPLAY  
HAVING SPACER WITH ROUGH FACE  
FOR INHIBITING SECONDARY ELECTRON ESCAPE

By

5

Roger W. Barton,  
Kollengode S. Narayanan,

Bob L. Mackey,

John M. Macaulay,

George B. Hopple,

10

Donald R. Schropp, Jr.,

Michael J. Nystrom,

Sudhakar Gopalakarishnan,

Shiyu Pei, and

Xueping Xu

15

ABSTRACT

A flat-panel display contains a pair of plate structure (20 and 22) separated by a spacer (24) having a rough face (54 or 56). When electrons strike the  
20 spacer, the roughness in the spacer's face causes the number of secondary electrons that escape the spacer to be reduced, thereby alleviating positive charge buildup on the spacer. As a result, the image produced by the display is improved. The spacer facial roughness can  
25 be achieved in various ways such as depressions (60, 62, 64, 66, 70, 74, or 80) or/and protuberances (82, 84, 88, and 92). Various techniques are presented for manufacturing the display, including the rough-faced spacer.

30